

### Abstract of the Disclosure

An index-guided buried heterostructure AlGaInN laser diode provides improved mode stability and low threshold current when compared to conventional ridge waveguide structures. A short period superlattice is used to allow adequate cladding layer thickness for confinement without cracking. The intensity of the light lost due to leakage is reduced by about 2 orders of magnitude with an accompanying improvement in the far-field radiation pattern when compared to conventional structures.

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